

OWENS-ILLINOIS **INSULUX** GLASS BLOCK

IMPORTANT—This catalog
supersedes all previous
printings of the Owens-
Illinois section of Sweet's
Architectural Catalog and
all reprints from same cov-
ering Insulux Glass Block.

OWENS-ILLINOIS GLASS COMPANY... INSULUX PRODUCTS DIVISION... TOLEDO, OHIO

OWENS-ILLINOIS
Insulux **GLASS BLOCK**
 MANUFACTURED BY OWENS-ILLINOIS GLASS COMPANY
"First in Glass"

Bruning Residence, Wilmette, Illinois
 George Fred Keck, Architect

INSULUX is manufactured by the Owens-Illinois Glass Company, nation-wide glass manufacturer, producing one of the largest tonnages and greatest diversifications of glass made in the world today. Owens-Illinois has developed and perfected not only the idea of glass block but glass insulators, all types of glass containers, glass home insulation, glass filters for filtering dust, and a family of glass industrial insulations.

With a daily capacity of thousands of tons of glass and 65 years' experience in manufacturing glass for use exposed to weather and chemical reaction under every conceivable condition, Owens-Illinois has had an ideal background for its work in the glass block field.

As a result, INSULUX has been developed with its own special plant and its own special glass as one of the most practical and best engineered materials ever brought to the building field. A corps of staff architects and engineers has worked continuously with glass technicians to produce a product to meet the everyday practical problems which architects and engineers must solve for their clients. These Owens-Illinois architects and engineers after seven years are still a part of the Owens-Illinois staff, working for the further perfection of INSULUX.

More than fifty thousand actual installations give testimony of the success with which INSULUX has met the needs of modern architecture. It is this success, typical of a long history of successful development and production of glass products that establishes the phrase "First in Glass" as the appropriate slogan of the Owens-Illinois Glass Company.

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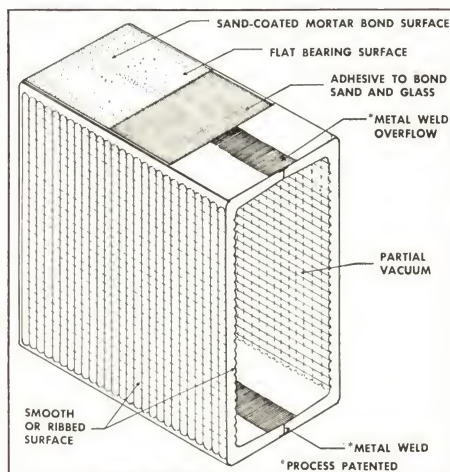
SERVICE TO ARCHITECTS

Owens-Illinois Glass Company maintains in its Architectural Department a well-qualified group of architects and engineers to check architects' glass block details, to provide architects with structural details for glass block construction and to supervise glass block construction on large jobs. *This service department does not function as an architect in competition with architects and does not prepare plans or sketches except as an aid to architects.*

USED TO TRANSMIT LIGHT...PROVIDE INSULATION...AND AS AN AID IN CREATING INTERESTING DESIGN

INSULUX—A HOLLOW GLASS BLOCK

Owens-Illinois Insulux is a hollow, partially evacuated block made of water-clear pressed glass. It is hermetically sealed at the time of manufacture, and is finished on the mortar-bearing surfaces with a gritty mortar bond. This permits it to be laid up in mortar to create attractive, light-transmitting panels with high insulating value. Insulux is translucent, but not transparent, and is highly resistant to the transmission of sound.



INSULUX—SERVES MANY USES

These basic features have made Insulux practical for virtually all types of construction. Industry uses Insulux for its light transmission, insulation value and low maintenance. Homes use it as a new design element, as a source of greater light without undue heat loss, and as a means of obtaining privacy—from view and noise. Commercial structures also use it as a design element, and as a means of obtaining interesting lighting effects to attract public patronage. Air-conditioned structures use it to provide light and beauty and to cut down the cooling load.

INSULUX—THE RESULT OF EXTENSIVE RESEARCH

Insulux is a proven, practical building material. It has been the object of extensive re-

Kimball Glass Company
Vineland, New Jersey
William Lescaze, Architect



Temperature
Control Chamber,
Plymouth Division,
Chrysler Corporation,
Albert Kahn, Inc.,
Architect

search both within the company and by outside, independent laboratories. Of interest to architects, is the fact that Insulux research has not only gone into the physical characteristics of the material itself, but also into its application and use under field conditions.

INSULUX—ERECTED BY BRICKLAYER OR MASON

From this field experience has been developed the standard method of erection of Insulux Glass Block. It is laid up by the

bricklayer or mason using a Portland cement-lime-sand mortar. Thus, it is handled by one of the oldest, most capable, and best established building trades.

INSULUX—SOLD BY DEALERS

Insulux Glass Block is sold by dealers. It is stocked in different sizes and designs to permit efficient delivery service in any desired quantity.

INSULUX—STOCKED IN ALL PRINCIPAL MARKETS

Insulux dealers have been established in all principal markets. Many hundreds of them are located to provide efficient coverage. Each has a genuine interest in the success of Insulux and is ready to be helpful in any way he can to those who contemplate using it.

Wieboldt Department Store
Oak Park, Illinois
Holabird & Root, Architects



SPECIAL FEATURES AND ADVANTAGES



New York City Building
N. Y. World's Fair
Aymar Embury II, Architect

DIFFUSION AND DISTRIBUTION OF LIGHT

Face patterns of INSULUX Glass Block being formed on four surfaces have the inherent ability to properly diffuse and distribute light. Some INSULUX patterns have been designed for their decorative qualities, and others for their practical application in the transmission of light. The chart on pages 8 and 9 classifies these blocks accordingly.

A typical illustration of the light distribution which might be expected through INSULUX Glass Block is shown in the curve of light readings (at the bottom of these pages) taken at the Painesville, Ohio plant of the Industrial Rayon Corporation where INSULUX was used in the monitors.



The Detroit Edison Co.
Detroit, Mich.
Designed by John Thornton

DESIGN

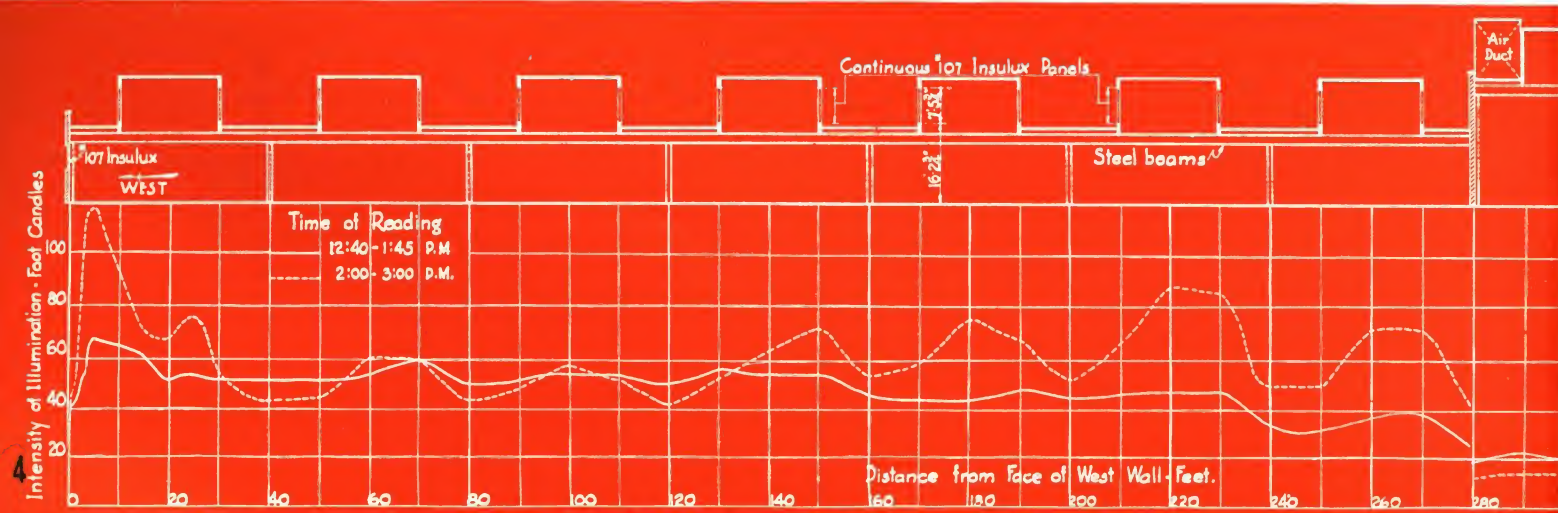
Because of its great flexibility in use, INSULUX Glass Block may be adapted to harmonize with most types of architectural design. In every kind of building—Industrial, Public, Commercial and Residential, INSULUX has been used successfully and economically. In homes and certain other structures, INSULUX creates a center of interest, lending a pleasing note to the whole design.

TRANSMISSION OF LIGHT

INSULUX being a hollow glass unit insures a wider range of face patterns than is possible with a single sheet of glass because of the four surfaces which may be treated. This unusual feature of INSULUX makes possible a wider variety of patterns and light transmitting values than is obtainable in single flat glass. INSULUX is available in a range of patterns, varying in their light transmitting value from 41 to 86.5 per cent.



Industrial Rayon Corporation, Painesville, Ohio
Wilbur Watson & Associates, Architects & Engineers
L. J. Jordan, Chief Engineer for Industrial Rayon Corporation



THERMAL INSULATION

INSULUX Glass Block panels are highly resistant to heat loss by conductance. Because of this insulating value, large light transmitting areas are practical without the excessive heat loss which is experienced with sash. The low conductance of INSULUX Glass Block plus its ability to reduce solar heat transmission as compared to sash, makes it admirably adapted to use in air-conditioned buildings. It provides ample light and reduces cooling costs. (See Test Data, page 22.)



Western Printing & Lithographing Co., Poughkeepsie, N. Y.
Edwin J. Kraus, Architect

ELIMINATION OF CONDENSATION

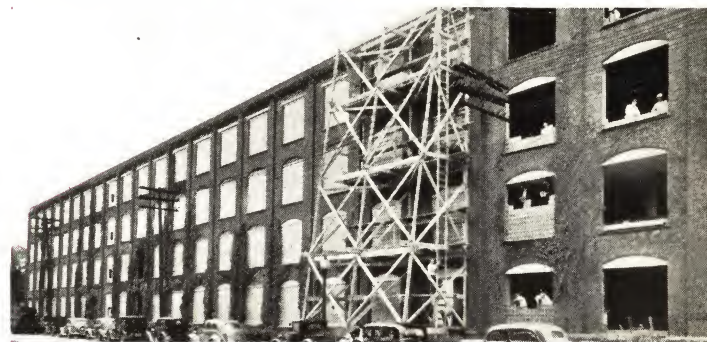
Condensation on the inside of windows during cold weather causes deterioration of sash. It is particularly prevalent in buildings where a high degree of humidity is maintained, such as dairies, food plants, textile and paper mills, tobacco factories, etc. INSULUX, because of its high insulating value, will reduce this condensation and resulting deterioration.



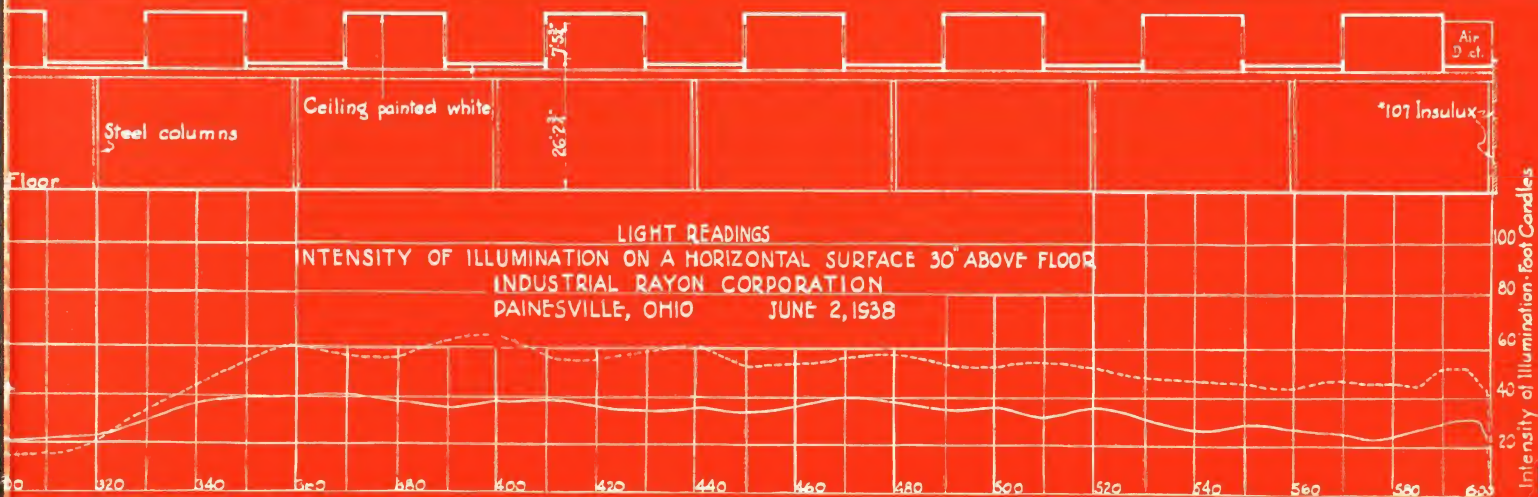
Philip Morris & Co., Ltd., Richmond, Va.
Francisco & Jacobus, Architects

REDUCTION OF SOLAR HEAT

Much of the cooling load on air-conditioning equipment is due to the transmission of solar heat through light transmitting areas which are exposed to the sun. Tests conducted at Purdue University show that INSULUX Glass Block panels materially reduce the solar heat transmission as compared to single glazed sash. This property of INSULUX Glass Block to reduce solar heat transmission, together with its low conductance and its reduction of infiltration, makes it ideal for use in air-conditioned buildings. (See Test Data, page 22.)



Carrier Corporation, Syracuse, N. Y.
Austin Company, Builders



SPECIAL FEATURES AND ADVANTAGES



Campbell Clinic, Memphis, Tenn.
Furbringer & Ehrman, Architects



West Side of 3rd Ave. between 77th and 78th—owned by the
Ogden Goellet Estate, New York City
E. H. Faile, Engineer—Starrett Bros. & Eken, Contractors

REDUCTION OF AIR INFILTRATION

Air leakage through and around windows adds to the cost of heating in the winter time, increases air-conditioning costs in the summer, and, in certain industries in which high humidities are maintained, causes the formation of ice on the outside of the building in cold weather. Typical methods of installation have been developed for INSULUX Glass Block panels which, for all practical purposes, almost entirely eliminate these problems of air leakage, while aiding the maintenance of desired interior temperature and humidity.

REDUCTION OF SOUND TRANSMISSION

Tests at the National Bureau of Standards show that INSULUX Glass Block panels have a sound reduction factor comparable to that of the usual partition used in fireproof structures. INSULUX can be used in light transmitting partitions without materially decreasing noise-reduction efficiency. This sound transmitting resistance makes INSULUX ideal for use in the exterior walls of buildings located near sources of noise—such as apartment buildings in New York and Chicago adjacent to elevated railways. (See Test Data, page 22.)

STRUCTURAL STRENGTH

As a result of the exclusive Owens-Illinois method of manufacture, INSULUX Glass Block has a uniform wall thickness that makes it possible to anneal the block properly, and to eliminate internal strain. This develops to the utmost the natural strength of the glass. INSULUX is not offered as a load-bearing material, yet it possesses ample compressive strength to be self-supporting within the limits prescribed by the ratio of its thickness to any practical height. (See Test Data, page 21.) Tests on individual units as well as panels of glass block have been performed at Purdue University.



Field House—Purdue University
Lafayette, Ind.
Walter Scholer, Architect



The Coca-Cola Bottling Works Company
Cincinnati, Ohio
John Henri Deekin, Architect



Roundhouse, Pennsylvania Railroad, Columbus, Ohio
Designed by Pennsylvania Railroad Staff

SANITATION AND CLEANLINESS

INSULUX Glass Block walls are easy to clean. It is the natural characteristic of glass to be non-absorbent to liquids, odors and grease. Several of the INSULUX patterns have smooth exterior faces, the designs being impressed only on the interior faces of the block. In other blocks or patterns, the faces have simple ribs running vertically on the exposed faces and horizontally on the interior faces of the block. (See pages 8 and 9). The character of these surfaces minimizes the accumulation of surface dirt and facilitates its removal. Dairies, hospitals, restaurants, packing plants and similar structures make use of this excellent feature of INSULUX in exterior walls and interior partitions.

PRIVACY

In certain types of commercial and industrial buildings, and in certain installations in the home, privacy is an important consideration. INSULUX permits privacy without the darkness that is usually associated with it. In homes, it is widely used to light bathrooms, stair wells and basements where ample light with privacy is desired. INSULUX is equally effective in commercial buildings, finding widespread acceptance as the modern method of office partitioning. It is particularly adaptable to schools and hospitals where both privacy and light are essential. It also permits undesirable views to be shut out without lessening the amount of light wanted.

Apartment Building
25 East 83rd Street, New York City
Frederick L. Ackerman, Architect



LOW MAINTENANCE

INSULUX Glass Block walls and panels require little maintenance other than occasional cleaning. The hard, brilliant surface of the block has the natural permanence and durability of glass. Obviously, INSULUX does not require painting, either inside or out. Should a block be damaged through carelessness or accident, it may be removed easily by chipping or sawing out joints. The new block is then buttered with mortar, inserted in place and the job completed by pointing.

DESIGNS, SIZES AND DESCRIPTION OF

SPECIAL DECORATIVE BLOCK



DESIGN No. 24

This new Insulux Block, designed by Walter Dorwin Teague, may be combined with other designs to form a variety of decorative effects. (Available only as No. 424— $11\frac{3}{4} \times 11\frac{3}{4} \times 3\frac{7}{8}$ inch size.) Transmits 83.5% of normal incident light.

LOW LIGHT TRANSMISSION BLOCK

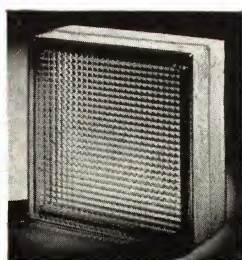
Insulux may also be had in special low light-transmitting designs, transmitting as low as 41% of normal incident light.

Designs, shapes and sizes are subject to change without notice.

SERIES AND SIZE OF RECTANGULAR BLOCKS

Series No.	Sizes in Inches
100 (1)	8 x $4\frac{7}{8}$ x $3\frac{7}{8}$
100-H (1-H)	$3\frac{7}{8}$ x $4\frac{7}{8}$ x $3\frac{7}{8}$
200	$5\frac{3}{4}$ x $5\frac{3}{4}$ x $3\frac{7}{8}$
300	$7\frac{3}{4}$ x $7\frac{3}{4}$ x $3\frac{7}{8}$
400	$11\frac{3}{4}$ x $11\frac{3}{4}$ x $3\frac{7}{8}$

FOR LIGHT DIFFUSION AND DISTRIBUTION

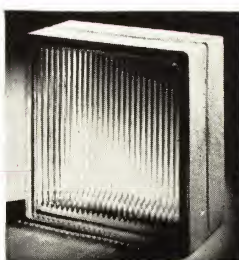
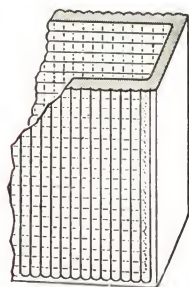


DESIGN No. 1

● These designs have found the best acceptance for use in buildings with large glass areas and where the occupancy requires well diffused and distributed light and minimum surface brightness such as in offices, classrooms, factory buildings, etc.

**TRANSMITS
78.5%
OF NORMAL
INCIDENT LIGHT**

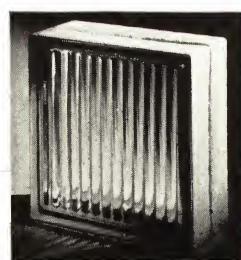
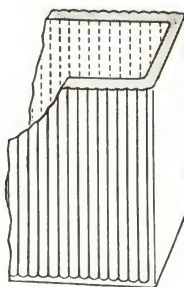
Design consists of $\frac{1}{4}$ -in. convex ribs carried vertically on both exterior faces and horizontally on both of the interior faces.



DESIGN No. 11

**TRANSMITS
86.5%
OF NORMAL
INCIDENT LIGHT**

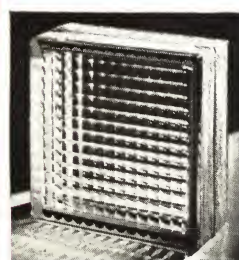
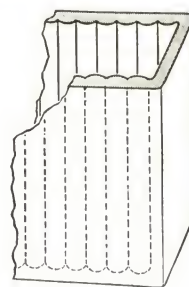
Design consists of $\frac{1}{4}$ -in. convex ribs carried vertically on both of the exterior faces. Both of the interior faces are smooth.



DESIGN No. 7

**TRANSMITS
84.4%
OF NORMAL
INCIDENT LIGHT**

Design— $\frac{1}{2}$ -in. (1 in. for 400 series) convex ribs carried vertically on both of the exterior faces. Both of the interior faces are smooth.

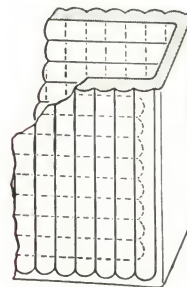


DESIGN No. 2

● These designs have qualities of the block suitable to obtain architecturally desirable surface brightness is obtained.

**TRANSMITS
73.4%
OF NORMAL
INCIDENT LIGHT**

Design— $\frac{1}{2}$ -in. (1 in. for 400 series) convex ribs carried vertically on both exterior faces and horizontally on both of the interior faces.



101 (1)

111 (11)

107 (7)

102 (2)

101-H (1-H)

111-H (11-H)

107-H (7-H)

102-H (2-H)

201

211

207

202

301

311

307

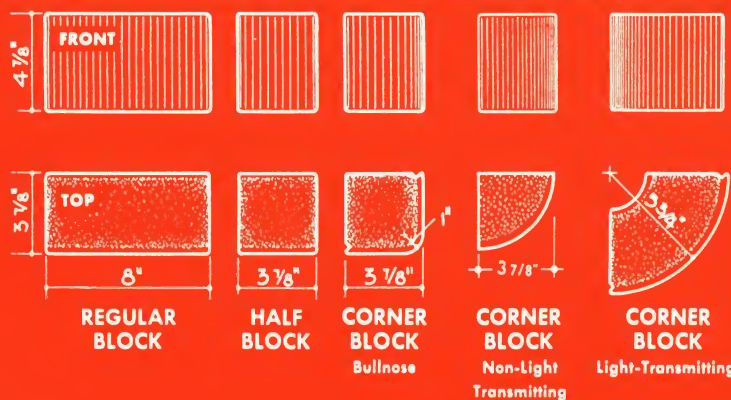
302

—

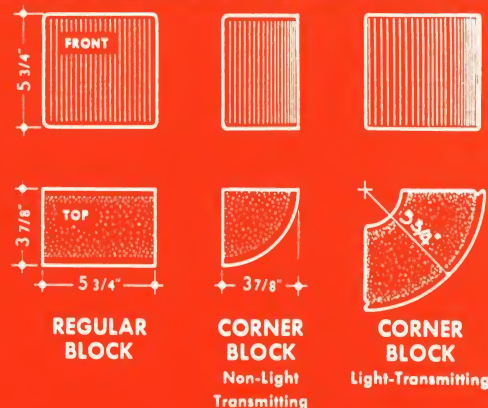
—

407

402



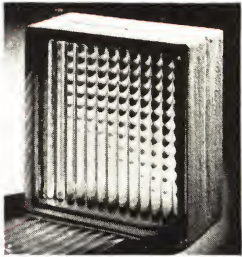
100 SERIES



200 SERIES

OWENS-ILLINOIS INSULUX GLASS BLOCK

FOR DECORATION



DESIGN No. 16



DESIGN No. 17

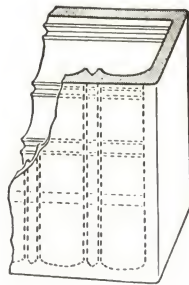
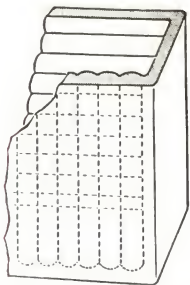
found the best acceptance where the decorative are paramount and where surface brightness is detrimental effects. Their use in rooms of buildings where rejectionable should be limited to north exposures.

TRANSMITS
84.4%
OF NORMAL
INCIDENT LIGHT

Design— $\frac{1}{2}$ -in. (1 in. for 400 series) convex ribs carried vertically on one interior face and horizontally on the other. Exterior faces smooth.

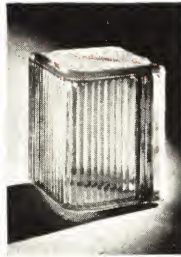
TRANSMITS
84%
OF NORMAL
INCIDENT LIGHT

Design— $\frac{1}{2}$ -in. ($\frac{1}{8}$ in. for 400 series) concave ribs on both interior faces—vertical on one, horizontal on other. Both exterior faces smooth.



—	—
—	—
216	—
316	317
416	417

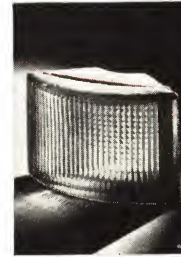
CORNER AND RADIAL BLOCKS



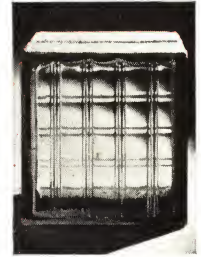
BULLNOSE



QUARTER
ROUND



LIGHT-TRANS-
MITTING CORNER



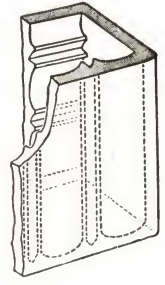
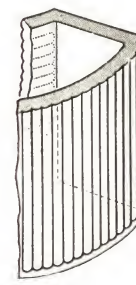
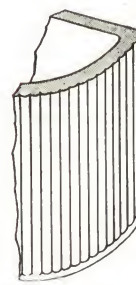
RADIAL

Non-light-transmitting corner block to be used with No. 100 series. Size $\frac{3}{8}$ x $\frac{3}{8}$ x $\frac{4}{8}$ in. Vertical exterior ribs on faces adjacent to bullnose corner, $\frac{1}{4}$ -in. ribs on the "A" block and $\frac{1}{2}$ -in. ribs on the "B" block.

Non-light-transmitting corner block to be used with No. 200 and 300 series. Size for 200 series $\frac{3}{8}$ x $\frac{3}{8}$ x $\frac{5}{8}$ in. and for 300 series $\frac{3}{8}$ x $\frac{3}{8}$ x $\frac{7}{8}$ in. Vertical exterior ribs, $\frac{1}{4}$ -in. and $\frac{1}{2}$ -in. on "A" and "B" blocks respectively.

Block to be used with No. 100, 200 and 300 series. Height $\frac{4}{8}$ -in. for 100 series, $\frac{5}{8}$ -in. for 200 series, $\frac{7}{8}$ -in. for 300 series. Vertical ribs on face of large radius and horizontal on face of small radius, $\frac{1}{4}$ -, $\frac{1}{2}$ - and 1-in. ribs for "A", "B" and "C" block respectively.

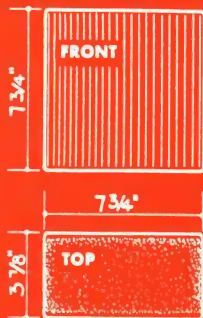
Radial block can be laid to varying radii from 3 ft., 6 in. to 6 ft. through variation in mortar joint. Width of long face $7\frac{3}{4}$ in., of short face 7 in. Pattern same as No. 317 Block with inside ribs, vertical on wide face, horizontal on narrow face.



100-A— $\frac{1}{4}$ " Rib (I-ABN)
100-B— $\frac{1}{2}$ " Rib (I-BBN)

100-AL— $\frac{1}{4}$ " Rib (I-AL)
100-BL— $\frac{1}{2}$ " Rib (I-BL)

—	—	—	—
—	—	—	—
200-A— $\frac{1}{4}$ " Rib	200-AL— $\frac{1}{4}$ " Rib	200-B— $\frac{1}{2}$ " Rib	200-BL— $\frac{1}{2}$ " Rib
300-A— $\frac{1}{4}$ " Rib	300-AL— $\frac{1}{4}$ " Rib	300-B— $\frac{1}{2}$ " Rib	300-CL—1" Rib
—	—	402-CL—1" Rib	301-R
—	—	416-CL—1" Rib	317-R (300-R)



REGULAR
BLOCK



CORNER
BLOCK

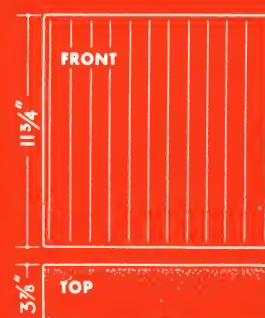


CORNER
BLOCK

Non-Light-Transmitting Light-Transmitting



RADIAL
BLOCK



REGULAR
BLOCK



CORNER
BLOCK

Light-Transmitting

300 SERIES

400 SERIES

DIMENSION TABLE AND ERECTION PROCEDURE

CONSTRUCTION DETAILS

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

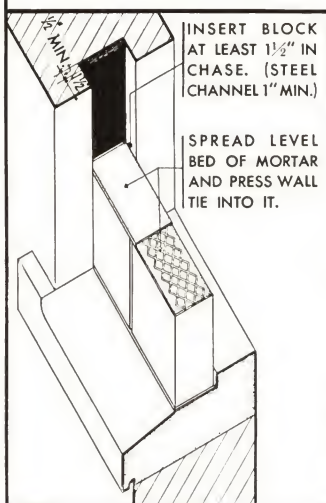
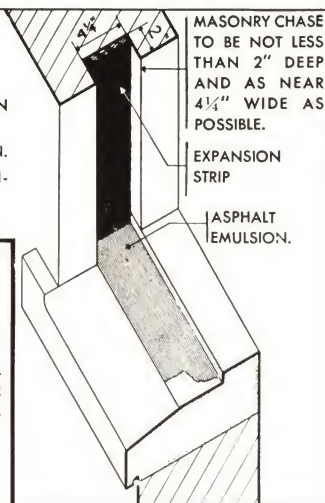
APPROXIMATE WEIGHT PER SQ. FT. OF INSULUX, LAID UP IN PANEL: 17.5 LB.

FUNDAMENTAL PRINCIPLES FOR THE ERECTION OF TYPICAL GLASS BLOCK PANELS

STEP No. 1

PRELIMINARY PREPARATION

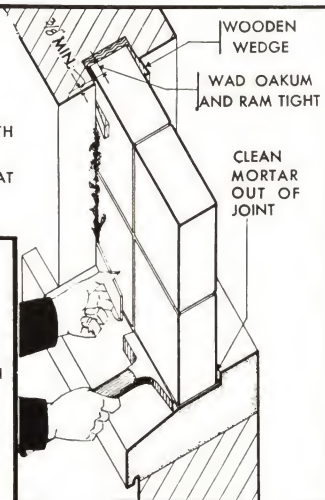
FORM CHASE OF SIZE SHOWN—IN MASONRY OR BY METAL SHAPES. PAINT SILL WITH ASPHALT EMULSION. APPLY EXPANSION STRIP CONTINUOUSLY AT HEAD AND JAMBS.



STEP No. 2

LAYING INSULUX

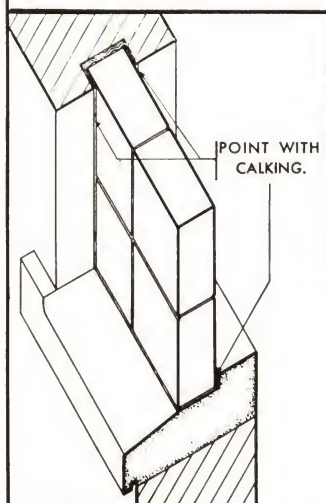
KEEP MORTAR OUT OF EXPANSION JOINT. USE FULL HEAD AND BED JOINTS. BED WALL TIE IN CENTER OF MORTAR JOINT.



STEP No. 3

BRACING PANEL AFTER MORTAR HAS SET

BRACE PANELS TEMPORARILY WITH WOODEN WEDGES. RAM OAKUM TIGHT IN SPACES AT SIDES OF BLOCK.



STEP No. 4

CLEANING AND CALKING

REMOVE WOODEN WEDGES. CLEAN PANEL. CALK TO DEPTH OF 3/8" MINIMUM.

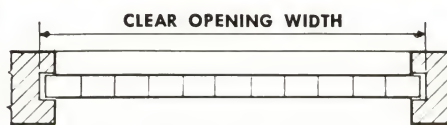
USE THIS PAGE IN CONJUNCTION
WITH TYPICAL DETAILS AND SPECIFICATIONS

DIMENSION TABLE

TO OBTAIN CLEAR OPENING SIZES ADD TO
BLOCK TABLE DIMENSIONS:

WIDTH—AT LEAST 3/4"

HEIGHT—AT LEAST 1/2" + MAX. LINTEL DEFLECTION



PLAN

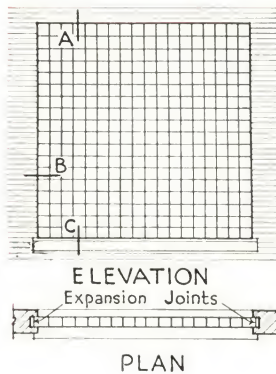
SECTION

No. of Units	4 7/8" x 8"		5 3/4" x 5 3/4"	7 3/4" x 7 3/4"	11 3/4" x 11 3/4"
	Height	Width	Height or Width	Height or Width	Height or Width
	1/4" joints	1/4" joints	1/4" joints	1/4" joints	1/4" joints
1	5 1/8"	8 1/4"	6"	8"	1' - 0"
2	10 1/4"	1' - 4 1/2"	1' - 0"	1' - 4"	2' - 0"
3	1' - 3 3/8"	2' - 0 3/4"	1' - 6"	2' - 0"	3' - 0"
4	1' - 8 1/2"	2' - 9"	2' - 0"	2' - 8"	4' - 0"
5	2' - 1 5/8"	3' - 5 1/4"	2' - 6"	3' - 4"	5' - 0"
6	2' - 6 3/4"	4' - 1 1/2"	3' - 0"	4' - 0"	6' - 0"
7	2' - 11 7/8"	4' - 9 3/4"	3' - 6"	4' - 8"	7' - 0"
8	3' - 5"	5' - 6"	4' - 0"	5' - 4"	8' - 0"
9	3' - 10 1/8"	6' - 2 1/4"	4' - 6"	6' - 0"	9' - 0"
10	4' - 3 1/4"	6' - 10 1/2"	5' - 0"	6' - 8"	10' - 0"
11	4' - 8 3/8"	7' - 6 3/4"	5' - 6"	7' - 4"	11' - 0"
12	5' - 1 1/2"	8' - 3"	6' - 0"	8' - 0"	12' - 0"
13	5' - 6 5/8"	8' - 11 1/4"	6' - 6"	8' - 8"	13' - 0"
14	5' - 11 3/4"	9' - 7 1/2"	7' - 0"	9' - 4"	14' - 0"
15	6' - 4 7/8"	10' - 3 3/4"	7' - 6"	10' - 0"	15' - 0"
16	6' - 10"	11' - 0"	8' - 0"	10' - 8"	16' - 0"
17	7' - 3 3/8"	11' - 8 1/4"	8' - 6"	11' - 4"	17' - 0"
18	7' - 8 1/4"	12' - 4 1/2"	9' - 0"	12' - 0"	18' - 0"
19	8' - 1 3/8"	13' - 0 3/4"	9' - 6"	12' - 8"	19' - 0"
20	8' - 6 1/2"	13' - 9"	10' - 0"	13' - 4"	20' - 0"
21	8' - 11 5/8"	14' - 5 1/4"	10' - 6"	14' - 0"	21' - 0"
22	9' - 4 3/4"	15' - 1 1/2"	11' - 0"	14' - 8"	22' - 0"
23	9' - 9 7/8"	15' - 9 3/4"	11' - 6"	15' - 4"	23' - 0"
24	10' - 3"	16' - 6"	12' - 0"	16' - 0"	24' - 0"
25	10' - 8 1/8"	17' - 2 1/4"	12' - 6"	16' - 8"	25' - 0"
26	11' - 1 1/4"	17' - 10 1/2"	13' - 0"	17' - 4"	26' - 0"
27	11' - 6 3/8"	18' - 6 3/4"	13' - 6"	18' - 0"	27' - 0"
28	11' - 11 1/2"	19' - 3"	14' - 0"	18' - 8"	28' - 0"
29	12' - 4 5/8"	19' - 11 1/4"	14' - 6"	19' - 4"	29' - 0"
30	12' - 9 3/4"	20' - 7 1/2"	15' - 0"	20' - 0"	30' - 0"
31	13' - 2 7/8"	21' - 3 3/4"	15' - 6"	20' - 8"	31' - 0"
32	13' - 8"	22' - 0"	16' - 0"	21' - 4"	32' - 0"
33	14' - 1 1/8"	22' - 8 1/4"	16' - 6"	22' - 0"	33' - 0"
34	14' - 6 1/4"	23' - 4 1/2"	17' - 0"	22' - 8"	34' - 0"

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

CONSTRUCTION DETAILS

PANELS IN 12"
MASONRY
WALLS



PANELS IN 12" MASONRY WALLS

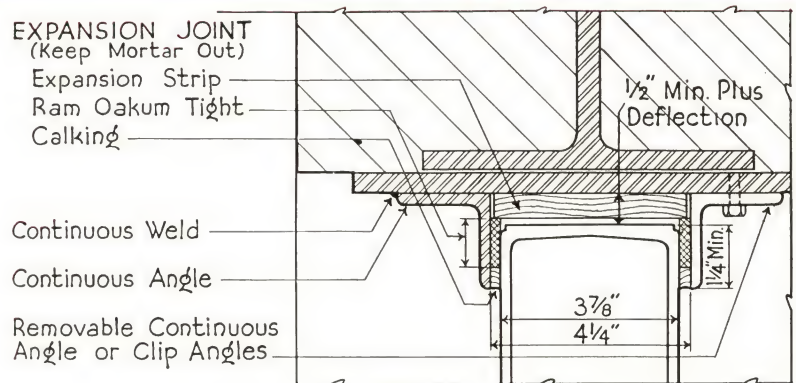
HEAD—Form "Expansion Joint" as shown on Detail A. Keep expansion joints clear of all obstructions such as rivet or bolt heads, clip angles and mortar.

JAMB—It is important to maintain the width and depth of "chases" as shown on Detail B. Irregularities of workmanship and material used in forming a masonry chase may be corrected where necessary by parging one or both sides of the chase. This permits the proper wedging action of the rammed oakum to support the panel against wind pressure.

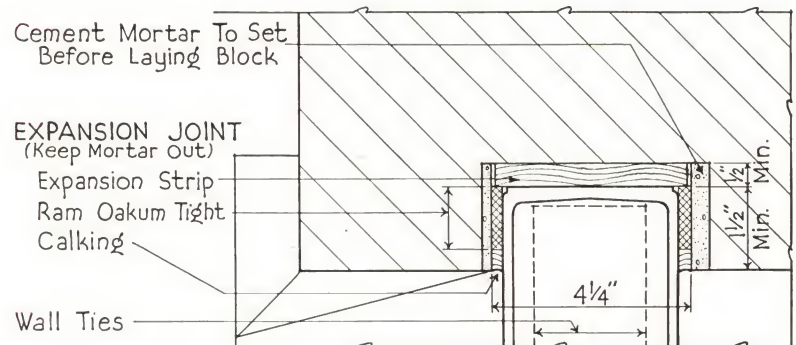
MORTAR JOINTS—All mortar joints are to be evenly and completely filled with mortar. Horizontal mortar joints are to be reinforced at intervals with continuous wall ties. See specifications.

SILL—Apply heavy brush coat of asphalt emulsion to sills. Allow emulsion to dry before laying first mortar bed.

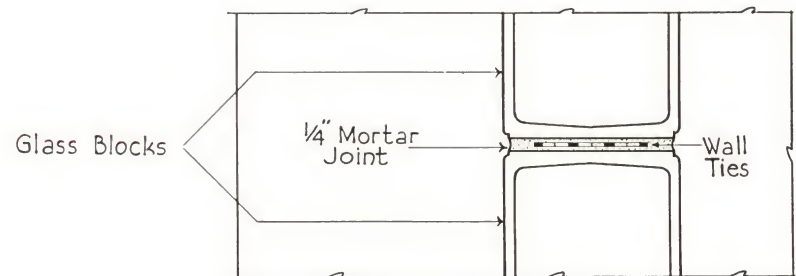
IMPORTANT... For panels larger than 144 sq. ft. in area or more than 20 lineal feet in any direction, see reinforcing details on pages 13 and 14.



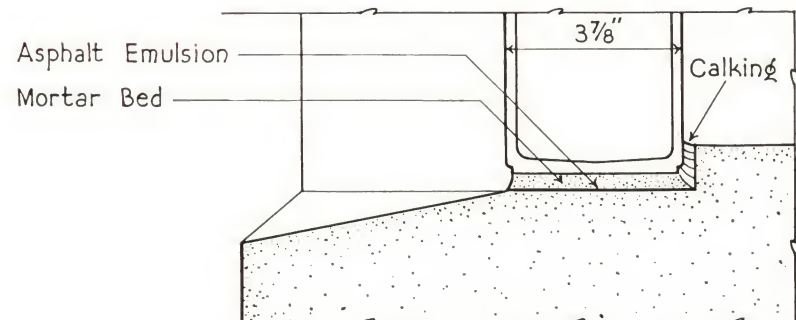
HEAD DETAIL "A"



JAMB DETAIL "B"



MORTAR JOINT DETAIL



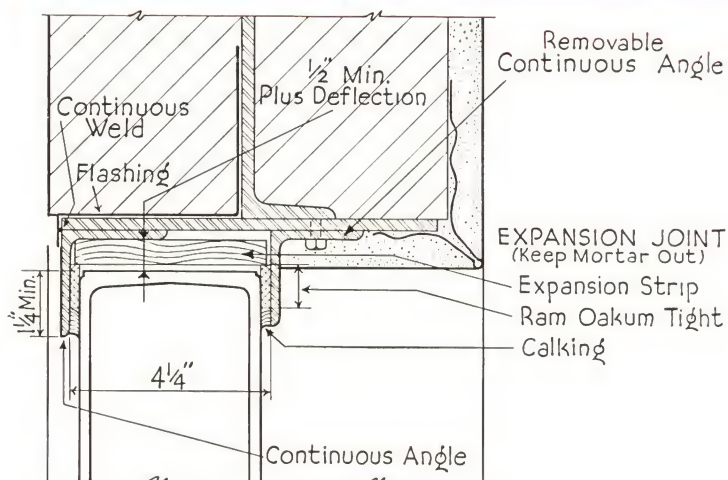
SILL DETAIL "C"

Scale 3" = 1'-0"

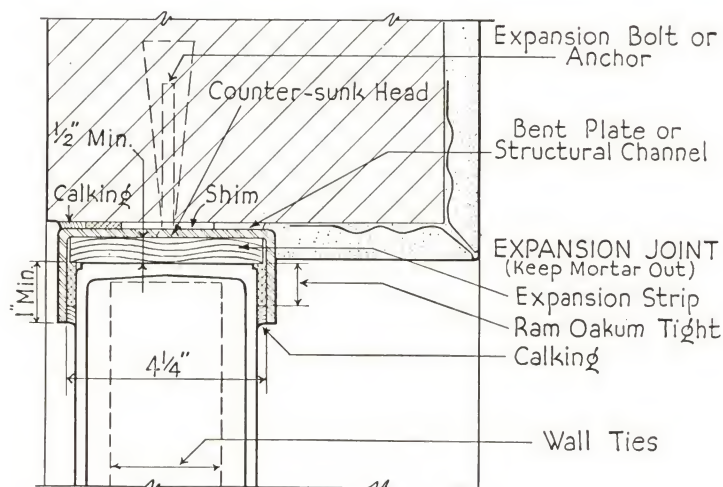
PANELS IN METAL
FRAMES OR 8"
MASONRY WALLS

CONSTRUCTION DETAILS

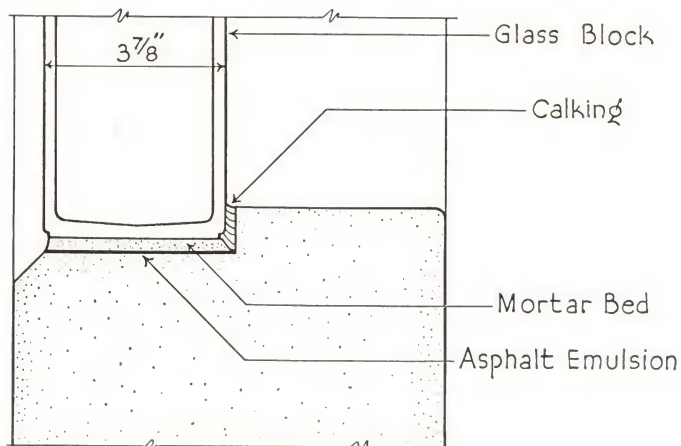
OWENS-ILLINOIS
INSULUX
GLASS BLOCK



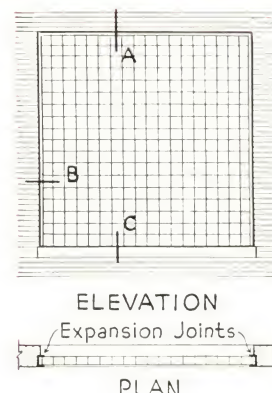
HEAD DETAIL "A"



JAMB DETAIL "B"



SILL DETAIL "C"
Scale 3" = 1'-0"

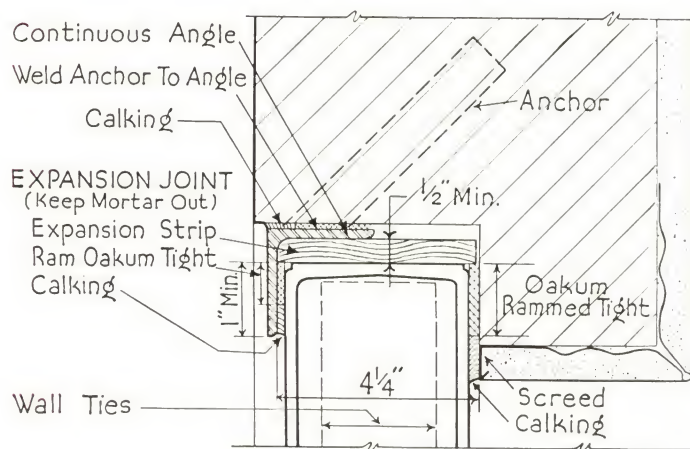


PANELS IN METAL FRAMES OR 8" MASONRY WALLS

These details are typical for Insulux panels when it is not practical to set them in a masonry chase at the jambs (as shown on page 11) or when installing them in an 8" masonry wall. This construction will also permit a variation in the depth of the opening reveal.

Due to the regularity of the "chase" or recess formed by metal shapes, the block may be set into these frames a minimum of 1" at the jambs (as compared to a minimum of 1 1/2" in masonry). This will permit the proper wedging action of rammed oakum to support the panel against wind pressure. **Metal frames are to be designed so that no bolt or rivet heads, clip angles or other obstructions project into the expansion joints.**

IMPORTANT... For panels larger than 144 sq. ft. in area or more than 20'-0" in any direction, see reinforcing details pages 13 and 14.

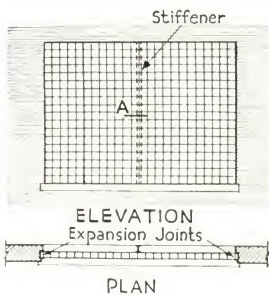


ALTERNATE JAMB "B"
Scale 3" = 1'-0"

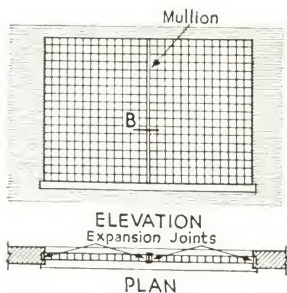
INTERMEDIATE REINFORCING FOR LONG PANELS

Long Insulux panels are either to be braced by intermediate structural stiffeners and/or are to be sub-divided by mullions, according to the limitations noted below.

Design members for proper stiffness. Connections (clip angles, bolts or rivets) are not to project into expansion joints.

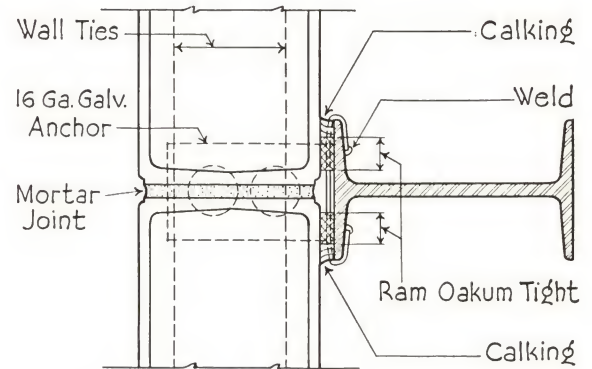
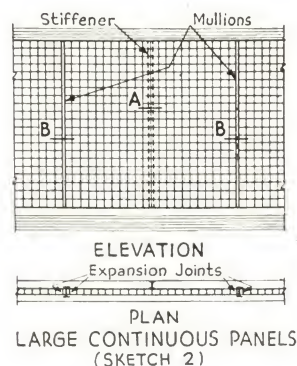
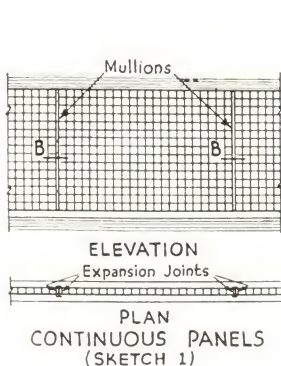
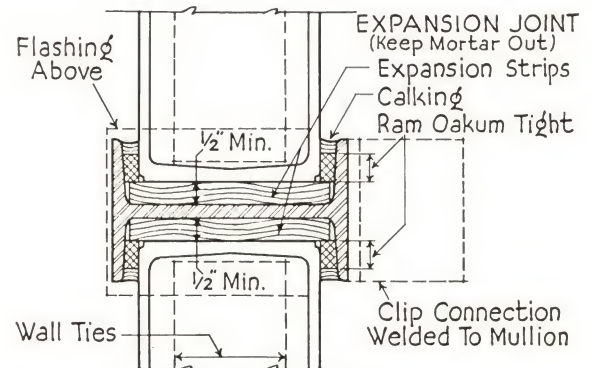
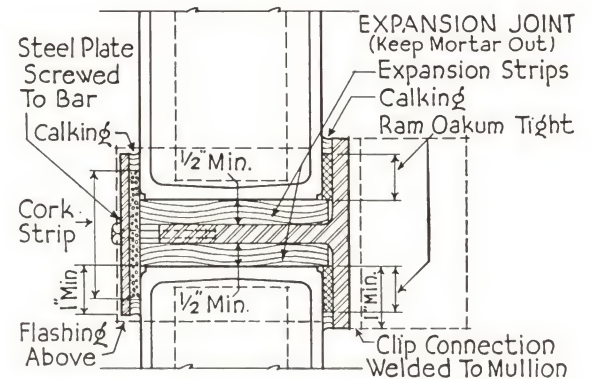


STIFFENERS—Panels more than 144 sq. ft. but less than 200 sq. ft. in area and not more than 20'-0" in length are to be braced by and anchored to structural stiffeners. (See Detail A)



MULLIONS—Panels more than 20'-0" in length or more than 200 sq. ft. in area are to be sub-divided by mullions instead of stiffeners. H type mullion sections (See Details) furnish "chase" design into which the panel edges are set and permit expansion and support against wind pressure. If areas between mullions exceed 144 sq. ft., these areas are to be further braced by vertical stiffeners.

CONTINUOUS PANELS—Continuous panels (Sketch 1) are to be sub-divided into areas not greater than 200 sq. ft. by mullions (Detail B) spaced not more than 20'-0" apart. When these divisions (see Sketch 2) exceed 144 sq. ft. in area they are to be further braced by structural stiffeners (Detail A) at intermediate points.

**STIFFENER DETAIL "A"****MULLION DETAIL "B"****ALTERNATE MULLION "B"**

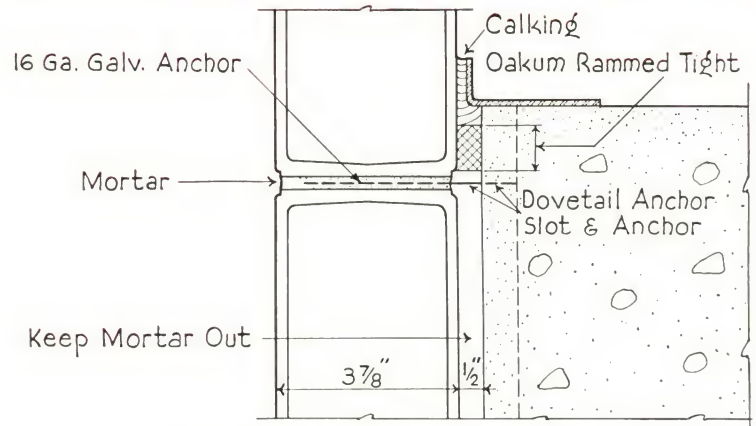
Scale 3"=1'-0"

TALL PANELS

CONSTRUCTION DETAILS

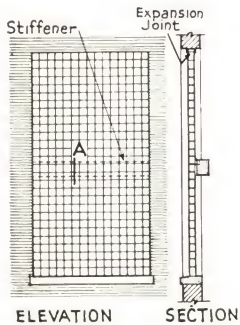
OWENS-ILLINOIS
INSULUX
GLASS BLOCKINTERMEDIATE REINFORCING
FOR TALL PANELS

High panels are either to be braced by intermediate stiffeners (or spandrels) or are to be subdivided by shelf angles according to the limitations noted below.

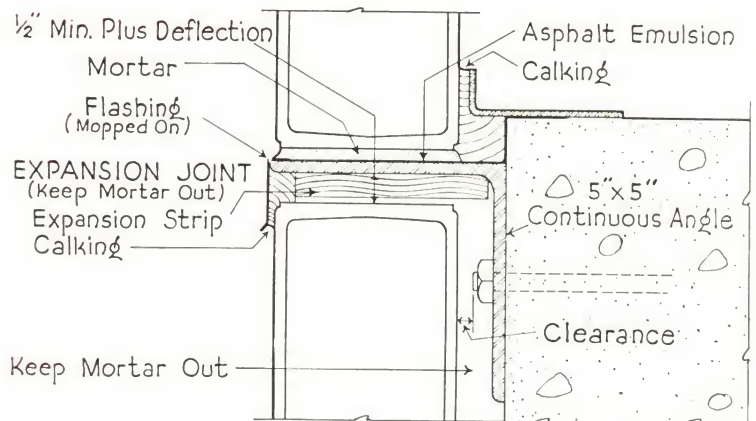


STIFFENER DETAIL "A"

PANELS LESS THAN 20'-0" IN HEIGHT

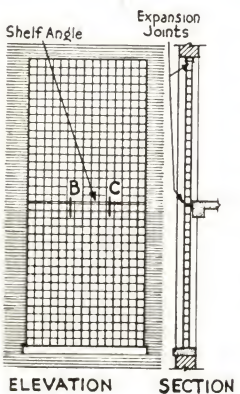


Panels more than 144 sq. ft. but less than 200 sq. ft. in area are to be braced by and anchored to stiffeners by 16 ga. gal. perforated anchors fastened to stiffeners and embedded in glass block mortar joints (Detail A).

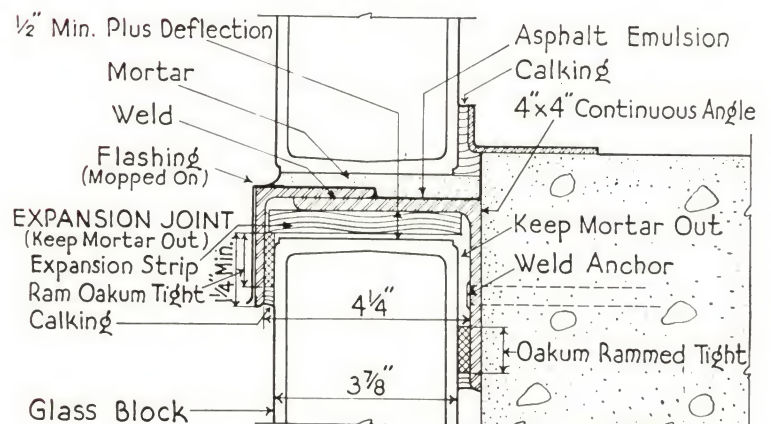


SHELF ANGLE DETAIL "B"

PANELS MORE THAN 20'-0" IN HEIGHT



Panels more than 20'-0" in height or more than 200 sq. ft. in area are to be subdivided by shelf angles. (See Detail B.) If areas between shelf angles exceed 144 sq. ft., these areas are to be further braced by vertical or horizontal stiffeners. (See Detail A). If panels are wider than 10'-0", use (Detail C).



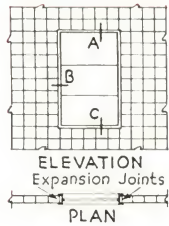
SHELF ANGLE DETAIL "C"

Scale 3"=1'-0"

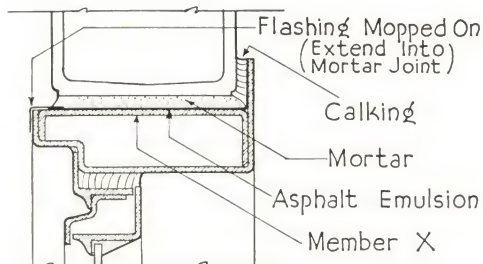
OWENS-ILLINOIS
INSULUX
GLASS BLOCK

CONSTRUCTION DETAILS

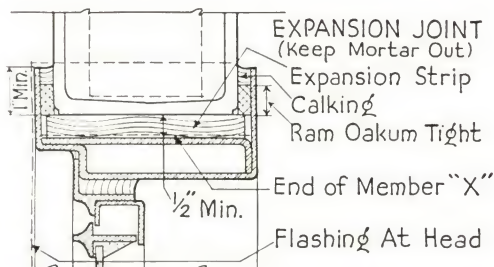
METAL WINDOW
FRAMES



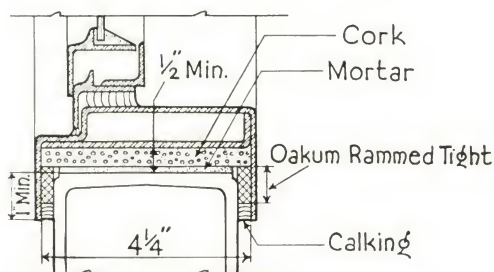
METHOD 1—This method provides a means of installing one or more isolated sash (not connected to building structure) in panels not exceeding 144 sq. ft. in area. Each sash should not exceed 15 sq. ft. nor their total area exceed 20% of the panel area. (See Details A, B, C.)



HEAD DETAIL "A"



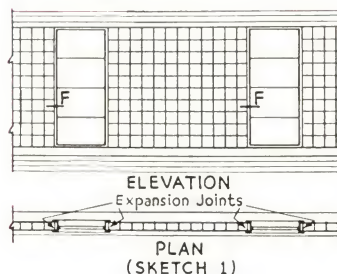
JAMB DETAIL "B"



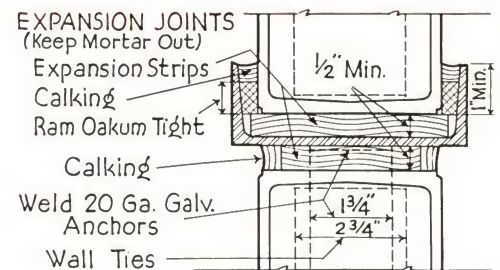
SILL DETAIL "C"
PRESSED METAL
WINDOW FRAMES
Scale 3"=1'-0"

METAL WINDOW FRAMES IN INSULUX PANELS

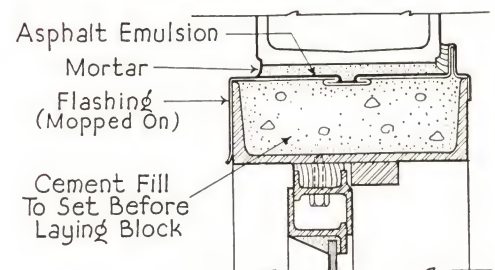
When ventilation or vision is required in outside walls, sash may be installed in Insulux panels. Two typical methods for designing this combination of sash and block are detailed below. The required sub-frames for steel sash are to be designed so that no bolts, rivets or clip angles occur in expansion joints. Where fire department means of access is required by the Building Codes, any form of window (min. size 32" wide and 48" high) manually operated or fixed may be used.



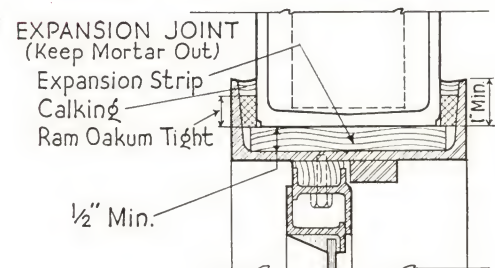
PLAN (SKETCH 1)



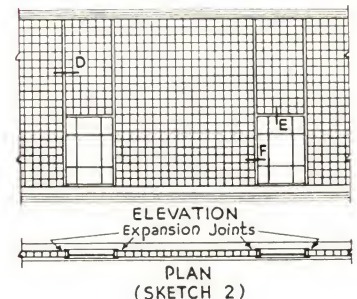
SECTION "D"



HEAD DETAIL "E"



JAMB DETAIL "F"
STRUCTURAL CHANNEL
WINDOW FRAMES
Scale 3"=1'-0"



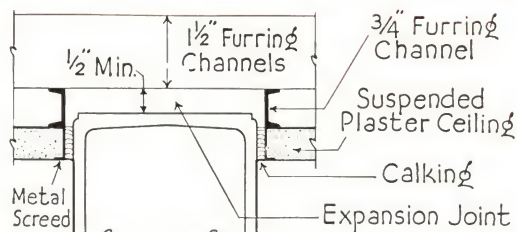
PLAN (SKETCH 2)

METHOD 2—When window areas exceed the sizes shown in Method 1, window subframes are to be anchored directly to the building structure. Sketch 1 and Sketch 2 show two methods for this type of construction. The structural shapes shown in details D, E, and F act not only as subframes for the sash but furnish intermediate reinforcing and expansion joints for large or continuous panels.

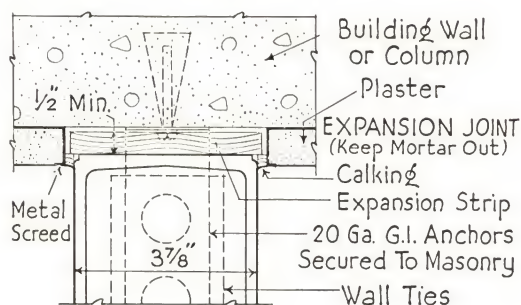
**METAL DOOR FRAMES
WOOD CONSTRUCTION
INTERIOR PARTITIONS**

CONSTRUCTION DETAILS

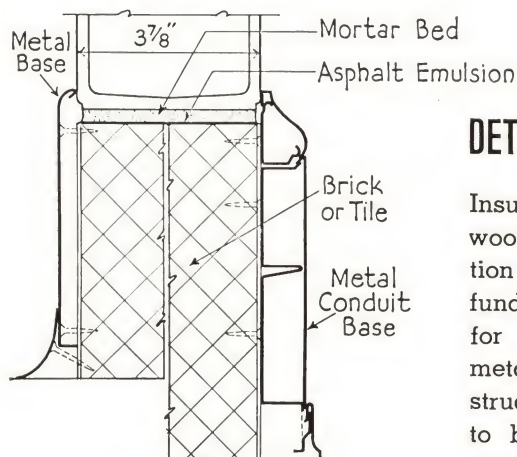
**OWENS-ILLINOIS
INSULUX
GLASS BLOCK**



HEAD DETAIL



JAMB DETAIL



***BASE DETAIL**
Scale 3"=1'-0"

INTERIOR PARTITIONS

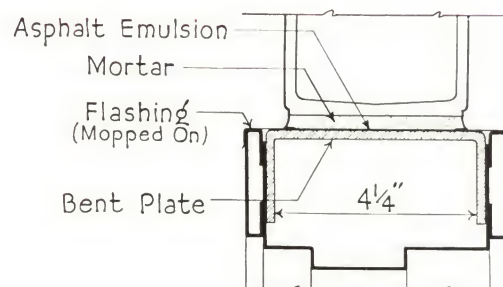
The installation of Insulux glass block in partitions conforms to the fundamentals shown for exterior construction — providing expansion joints at both jambs and head, adequate anchorage and using wall ties as called for in specifications.

Limiting sizes of panels may be increased to 200 sq. ft. in area without intermediate bracing, providing adequate anchorage for the panel is obtained at jambs and head by a chase or channel frame.

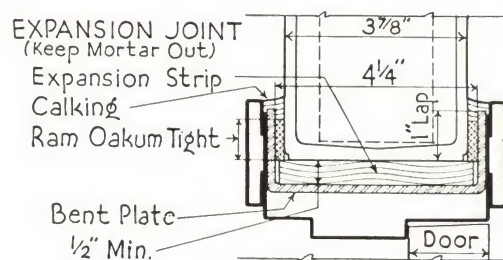
*Base details show two alternate methods.

DETAILS OF EXTERIOR METAL DOOR FRAMES

All door frames are to be securely anchored to the building structure at the sills. For large doors or doors subjected to rough usage, extend channel frames and anchor them to the building structure.



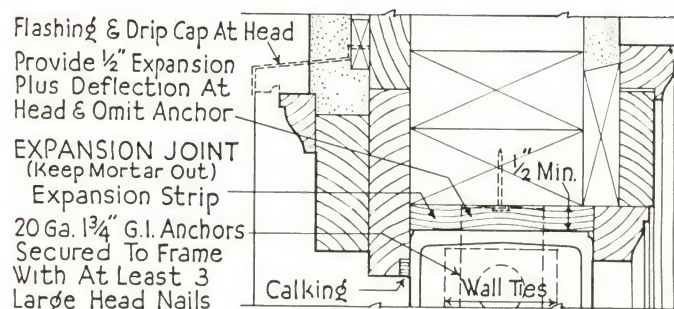
DOOR HEAD



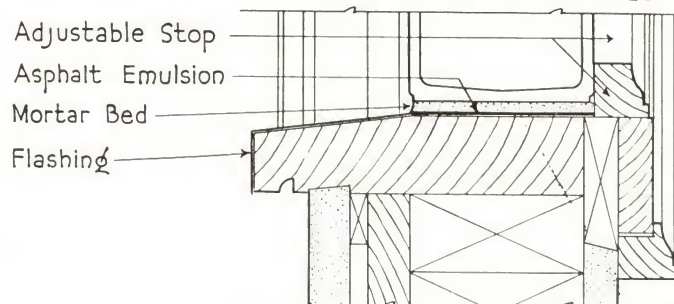
DOOR JAMB

DETAILS OF PANELS IN WOOD FRAME CONSTRUCTION

Insulux panels in wood frame construction conform to the fundamentals shown for masonry and metal frame construction. Wood sills to be covered with metal flashing and painted with asphalt emulsion before laying block. See Sill Detail.



JAMB DETAIL
HEAD SIMILAR AS NOTED



SILL DETAIL

Scale 3"=1'-0"

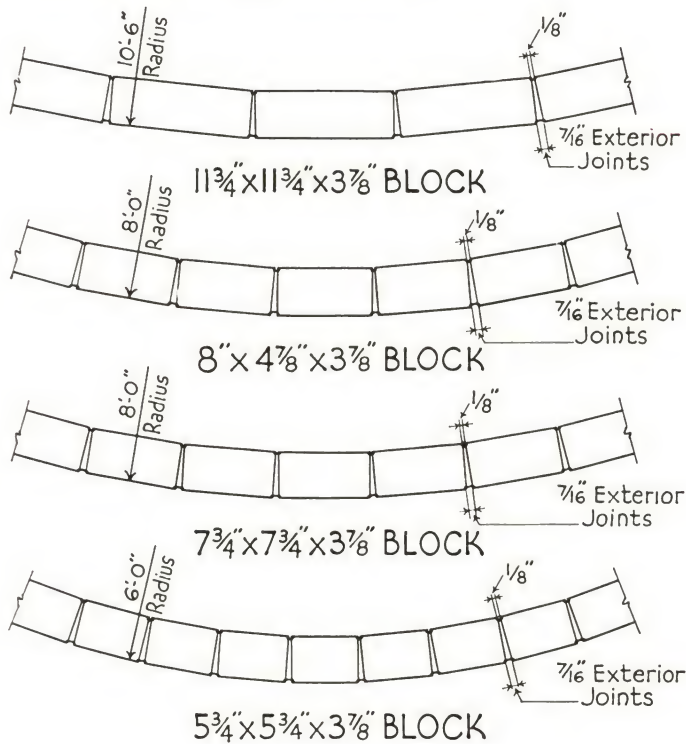
OWENS-ILLINOIS
INSULUX
GLASS BLOCK

CONSTRUCTION DETAILS

MIN. LAYING RADII
ALTERNATE DETAILS
FOR SMALL PANELS

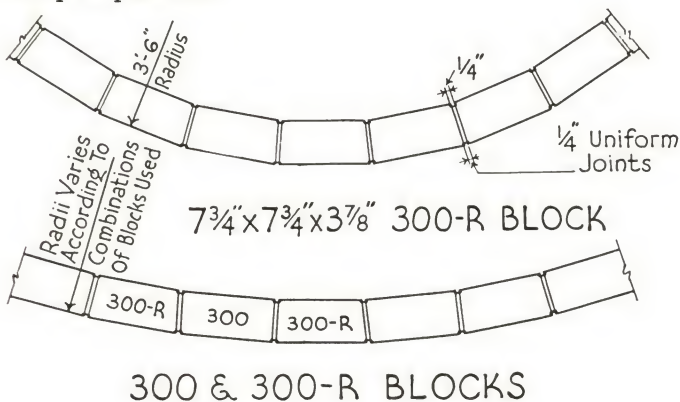
MINIMUM LAYING RADII FOR STANDARD BLOCK

Standard Insulux block can be laid on a variety of radii by varying the mortar joint thicknesses. Special radial block are for small radii and are available only in 317-R and 301-R.



LAYING RADII FOR RADIAL BLOCK

Special radial block are available in the 300 Series (outside face size 7 3/4 x 7 3/4 inches) in two designs—317-R and 301-R. These block will permit the laying of smaller radii than standard block. The minimum laying radius for this block (maintaining 7/16 inch outside joint) is 2'6". By combining radial block and standard block in various combinations, great flexibility is possible.



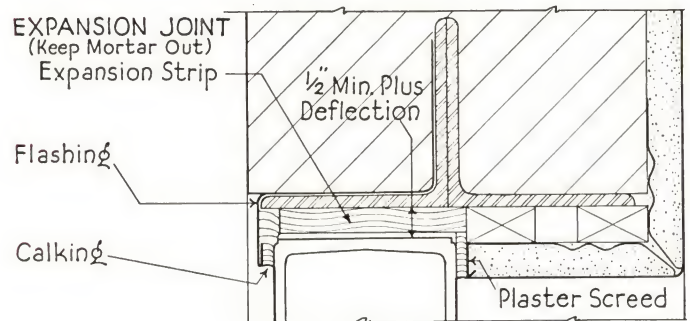
ALTERNATE DETAILS FOR SMALL PANELS

These details are only to be used when it is impractical to use "chase" construction. They should never be used for panels larger than 80 sq. ft. in area or more than 8'0" in height or for any panels having severe exposures such as in tall buildings.

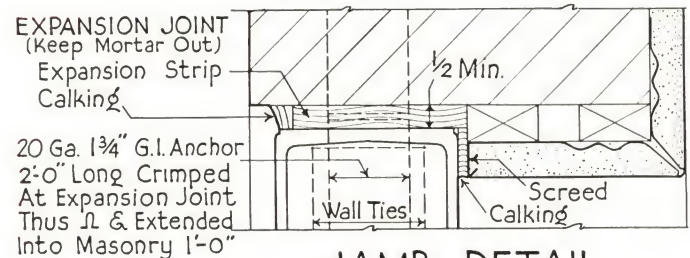
HEAD—Form expansion joints as shown keeping them clear of mortar and other obstructions. The heads of all panels should be flashed and when panels exceed 6'0" in length use interior and exterior stop angles. (See Detail A, page 12).

JAMB—Anchor panels as shown and as specified. Anchors are to be crimped to provide for expansion and contraction of panels. It is **extremely important** that mortar does not lodge in expansion joints by building up around anchors.

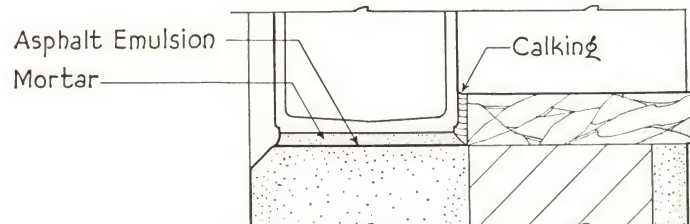
Note: Expanded metal wall ties are not to be used as anchors. See specifications.



HEAD DETAIL



JAMB DETAIL



SILL DETAIL

Scale 3" = 1'-0"

SPECIFICATIONS PAGE 1

BASIC SPECIFICATIONS

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

GLASS BLOCK—Glass Block shown on the drawings, or called for in these specifications shall be hollow, partially evacuated, water-clear units of pressed glass as manufactured by Owens-Illinois Glass Company. All shell walls of the block shall be not less than $3/16$ of an inch thick. All mortar-bearing surfaces of the block shall be true and straight with a tolerance of $1/16$ of an inch, plus or minus, and shall be precoated with an alkali and moisture-resistant, grit-bearing material. The face dimensions of the glass block shall be as shown on the drawings. All blocks shall be $3\frac{7}{8}$ inches thick with a tolerance of $1/16$ inch. The face design of the block shall be as designated, by number, on the drawings.

(Indented type matter is explanatory and need not be included in specifications if covered in drawings.)

Insulux Glass Block are light-transmitting building units designed to be laid up in mortar by bricklayers and have flat mortar-bearing surfaces as is common practice in other units with which the bricklayer already is familiar. The grit-bearing bond material that is baked on at the factory insures adhesive and shear values at the mortar joint where needed. Face designs, obtained by ribs and other configurations on the interior and/or exterior surfaces of the block shells, control the transmission and diffusion of light and are designated by number as illustrated on Pages 8 and 9. Face Dimensions of standard block are: ($4\frac{7}{8}$ " x 8") ($5\frac{3}{4}$ " x $5\frac{3}{4}$ ") ($7\frac{3}{4}$ " x $7\frac{3}{4}$ ") ($11\frac{3}{4}$ " x $11\frac{3}{4}$ ").

MORTAR—The materials used in the mortar shall be measured by volume. The mortar shall be composed of one part waterproof Portland cement, one part lime, and four parts of well-graded sand, shall be mixed in a watertight box and hoed from end to end until thoroughly incorporated. Prepared masonry mortars of high strength and low volume change, mixed according to the manufacturer's directions, may be substituted if desired. Consistency shall be such that the hoe is clean when withdrawn from the mortar, the resulting mixture being drier than that used for ordinary brick work.

CEMENT—All cement used in the mortar shall be waterproof Portland cement, complying with the specifications of the American Society for Testing Materials.

LIME—Lime shall be either hydrated lime or a high calcium, well slaked, quick lime. Quick lime shall be slaked in a watertight box, using sufficient water to prevent burning. During the slaking it shall be hoed thoroughly. All slaked lime shall be aged for at least seven days before using. All hydrated lime shall meet the standard specification of the American Society for Testing

Materials.

SAND—All sand used for mortar shall be clean, free from vegetable matter, loam, clay and other foreign matter. It shall be of the following sieve analysis:

100% to pass No. 10 sieve
80% - 100% to pass No. 16 sieve
40% - 85% to pass No. 30 sieve
10% - 30% to pass No. 50 sieve
0% - 5% to pass No. 100 sieve

WALL TIES—Horizontal mortar joints shall be reinforced with flat rolled $\frac{3}{4}$ " mesh 20-gauge expanded metal wall ties, $2\frac{3}{4}$ inches wide by eight feet long, galvanized after forming. Ties shall run continuously by lapping ends six inches and shall be located in certain horizontal mortar joints as follows:

No. 100 Series Block, every fourth course
No. 200 Series Block, every fourth course
No. 300 Series Block, every third course
No. 400 Series Block, every course

Upon approval of the architect, alternate wall ties of 20-gauge galvanized steel strips, $1\frac{3}{4}$ inches wide by six feet long, perforated with rectangular holes, $1\frac{5}{8}$ inches on centers, may be substituted for the expanded metal wall ties.

Ties shall not be laid directly on the block, but shall be completely embedded in the center of the mortar joint.

Wall ties serve a dual purpose. They reinforce the horizontal mortar joints against wind pressure and materially reduce the possibility of cracks. They are laid in the horizontal joints, rather than in the vertical joints, because the bricklayer can bed them properly, thereby attaining their maximum efficiency. Attempts to place light reinforcement in vertical joints have been proved to destroy the effective results of a "shoved" joint.

LAYING OF GLASS BLOCK—In laying glass block, all mortar joints shall be filled completely with mortar. The joints shall be not less than $\frac{1}{4}$ inch thick or not more than $\frac{3}{8}$ inch thick. Block shall not be hit with a metal tool, but laid by the method known as "shoving", (working into place with the hands) thereby compressing the vertical joints. After the mortar has passed its initial set, the exposed edges of the joints shall be tooled and thoroughly compressed with a round jointer. The finished surface of the joint shall be slightly concave, smooth and nonporous. The final cleaning shall not be done until after the mortar has reached its final set.

If blocks are in any way disturbed after laying, during

the plumbing, tooling, or cleaning process, such blocks shall be removed and relaid.

A $\frac{1}{4}$ inch minimum joint thickness is required because a certain percentage of the horizontal joints contain continuous steel wall ties and/or wall anchors which would come into direct contact with the glass in a thinner joint: this joint thickness enables the bricklayer to lay the block with ease. A maximum thickness of $\frac{3}{8}$ " is called for because: thicker joints cause undue shrinkage, which is particularly objectionable in 4" walls: thick joints are also too rigid and inflexible to accommodate sudden thermal change. It has been found that if the bricklayers' trowel handles are capped with a common type of rubber ferule used on crutches, tapping of the blocks can be resorted to, to supplant "shoving."

SILLS—Apply heavy brush coat of asphalt emulsion to sills before the first mortar joint is laid. Allow emulsion to dry before spreading mortar.

EXPANSION JOINTS, ANCHORAGE, AND PANEL SIZES—Expansion joints shall be provided at the junction of glass block and all other materials (heads, jambs, shelf angles, window and door frames) except at the sill. They are to be formed by setting the edges of the panel into a "chase" or recess at heads and jambs, constructed as shown on the drawings. Large panels shall have intermediate expansion joints and shall be reinforced as shown on the drawings.

Insulux Glass Block is not a load-bearing material and lintels are required above all panels. Expansion joints at heads and jambs are to be designed to support the panel against wind pressure (inward and outward) and yet cushion the edges of the panel from direct contact with the building structure. (See details, page 11.) Large panels (more than 144 sq. ft., but less than 200 sq. ft. in area, and not more than 20 ft. in either direction) are to be braced by structural stiffening members. (See details, page 13.) Panels more than 20 ft. in either direction or more than 200 sq. ft. in area are to be subdivided by mullions or shelf angles designed to allow for intermediate expansion and to resist wind pressure. (See details, page 13.) If areas between mullions or shelf angles exceed 144 sq. ft., they are to be further braced by stiffeners.

The back of all "chases" or recesses (heads, jambs, mullions, etc.) shall be lined with Owens-Illinois Fiberglas Expansion Joint Strips— $\frac{1}{2}$ " thick x $\frac{4}{8}$ " wide x 25" long, or approved equal. Ends of Strips shall be butted together to form a continuous cushion around the edges of the panel. They shall be installed before the block is laid and shall be held in place by an adhesive such as asphalt emulsion. After the panels have been laid and the mortar has set, ram non-staining oakum between the sides of the block and the sides of the "chase." Ram oakum back $\frac{3}{8}$ " from the finished surface. Fill recess thus formed with a non-hardening waterproof calking material to a depth of

not less than $\frac{3}{8}$ ".

Fiberglas Expansion Joint Strips are designed to keep the edges of the panels from coming into direct contact with the building structure and to eliminate the possibility of mortar gobs lodging in this expansion joint.

They must be so installed that they form a continuous cushion completely protecting the panel edges. One-half inch in thickness at jambs is sufficient for most buildings, but should be increased if excessive structural movement of the building may be expected due to light construction or extreme length. Additional clearance between the bottom of the strip and the top of the panel at the head is to be provided to take care of lintel deflection where necessary. Oakum must be rammed at the sides of the block and wedged tightly in order to support the panel against inward and outward wind pressure.

ALTERNATE—(Expansion Joints and Anchorage)—Expansion joints and anchorage may be provided for small panels as shown on the drawings. Fiberglas Strips or equal shall be fastened to head and jambs. They shall form a continuous cushion between the edges of the panel and the building structure. The panels shall be anchored at the jambs by 20-gauge perforated galvanized strips $1\frac{3}{4}$ " x 24" imbedded in masonry and extended into horizontal glass block mortar joints. These shall be located as frequently as wall ties and shall be crimped at expansion joints. After mortar has set, rake out the edges of the Fiberglas Strips to a depth of at least $\frac{1}{2}$ " and bend the paper faces back into the joint. Point with gungrade waterproof calking material to a depth of at least $\frac{1}{2}$ ". (If angles are used at the head of panels ram oakum between the sides of the panel and the legs of the angle and point with calking.)

This detail is not to be used for panels more than 80 sq. ft. or more than 8' 0" in height nor for any panel subject to severe winds such as in tall buildings. Anchors are to be crimped to allow for building and panel movement. Care must be taken to fit Fiberglas Strips tightly around these anchors to eliminate the formation of mortar droppings at these points. Expanded metal wall ties are not to be used as anchors. Interior and exterior stop angles are to be provided at the heads of all panels longer than 10' 0"—See details.

Specific variations are required for fire retardant panels (See page 21) and for panels erected under the jurisdiction of the Pacific Coast Building Officials Conference. (Available on request.)

Other variations in the above specifications may become advisable in some cases after a study of conditions pertaining to occupancy, processing, climate, etc., seem to warrant them. For suggestions, write the Owens-Illinois Glass Company, Toledo, Ohio, giving full particulars.

BUILDING CODES AND WIND PRESSURE TESTS

TEST DATA

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

BUILDING CODES

For their recommended uses, Insulux Glass Block have met with acceptance by and approval of state and municipal building commissioners, including the Pacific Coast Building Officials Conference. The strength of individual units and panels, their wind resistance, their fire and hose stream resistance, and other essential physical properties have been demonstrated at Purdue, Columbia and Leland Stanford, Jr., Universities, the National Bureau of Standards and at the Underwriters' Laboratories, Chicago. These tests have been conducted in the presence of numerous building code authorities. Official approvals conforming to Owens-Illinois Glass Company's basic specifications (See Pages 18 and 19) have been secured from: Industrial Board, State of New York; Wisconsin State Industrial Commission; Building Department, District of Columbia; Building Department of Boston, New York, Chicago, Los Angeles, St. Louis and others.

West Coast approvals and that of the City of New York, due to local demands, require smaller maximum panel sizes and additional reinforcement. Existing local requirements for the use of glass block are available on request.

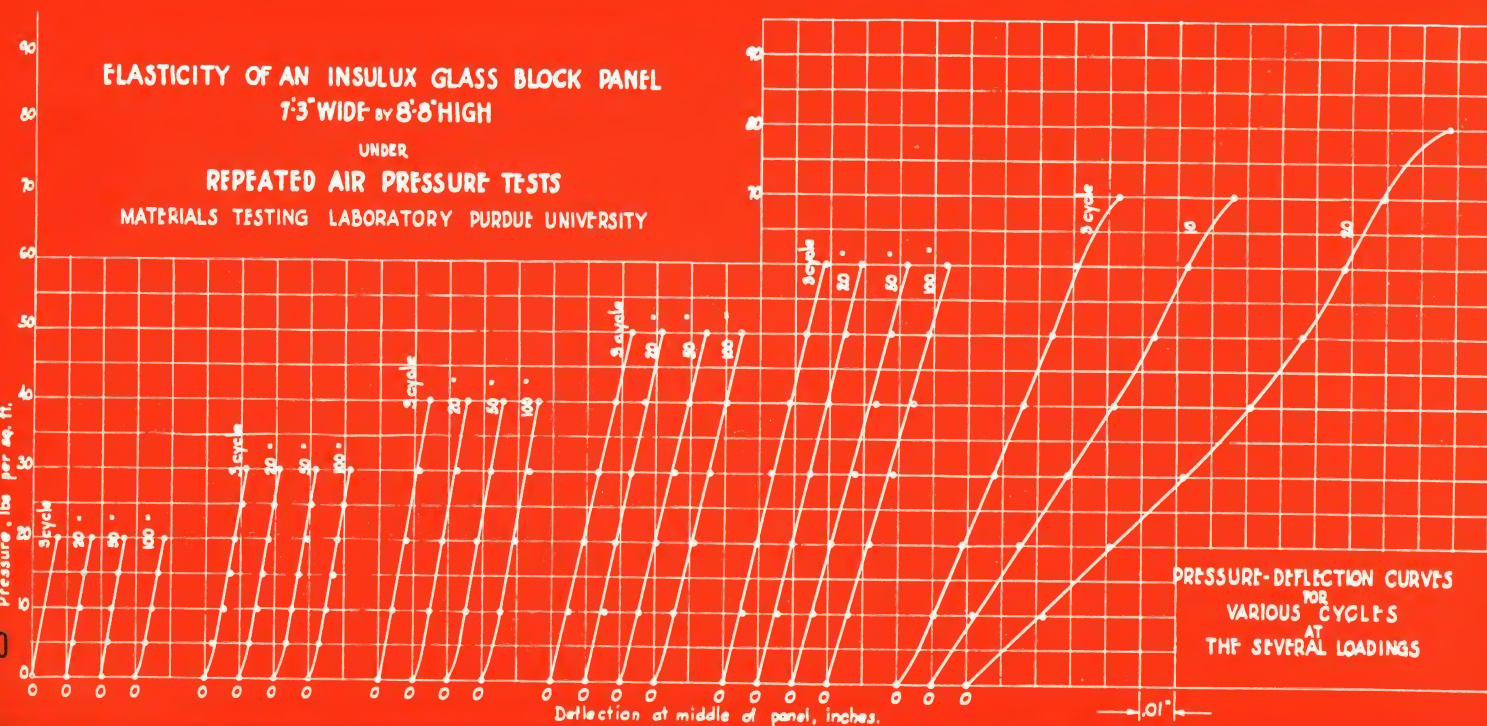
WIND PRESSURE TESTS

An Insulux Glass Block panel 7'-3" wide by 8'-8" high was built at Purdue University following standard specifications of Owens-Illinois Glass Company. This panel was tested by repeated applications of air pressure over one entire face. Pressure was applied and released intermittently for 100 cycles at each of the pressures of 20, 30, 40, 50 and 60 pounds per square foot.

Results of this test show that the panel is entirely elastic under repeated loadings with a pressure of 50 pounds per square foot, which corresponds to a wind velocity of about 112 miles per hour.

The panel withstood 50 cycles of pressure at 60 pounds per square foot before any minute permanent set was detected. After 100 cycles at 60 pounds pressure, visible checking of the mortar joints occurred. This pressure corresponds to a wind velocity of 122 miles per hour.

Final failure of the panel occurred with a pressure of 91 pounds per square foot which corresponds to a wind velocity of 150 miles per hour. Failure occurred in the mortar joints due to shear. The blocks were undamaged.



OWENS-ILLINOIS
INSULUX
GLASS BLOCK

TEST DATA

FIRE AND
COMPRESSION
TESTS

FIRE TEST

UNDERWRITERS' GUIDE CARD*



Guide No. 40 UM2.6.5. December 13, 1937

File R2582.

Owens-Illinois Glass Co., Mfr.,
Ohio Bldg., Toledo, Ohio.

Glass Blocks.

For window openings not exceeding 120 sq ft in area, nor 12 ft in width or height, subject to light fire exposure (Class F openings).
No. 1 Insulux hollow glass blocks, nominally 8 in. long, 4- $\frac{1}{8}$ in. wide, 3- $\frac{3}{4}$ in. thick; laid with $\frac{3}{8}$ -in. horizontal and vertical mortar joints; mortar consisting of one part portland cement, one part hydrated lime, and four parts silica sand by volume; each horizontal joint reinforced for full length with 20-gauge galvanized diamond mesh expanded metal; the glass block panels extending 3- $\frac{1}{2}$ in. into grooves 4- $\frac{1}{4}$ in. deep in jambs and lintels of the masonry openings, with loose mineral wool in the remaining spaces in the grooves, to provide for expansion of the glass panels; exterior jamb and lintel edges caulked with waterproofing mastic.

Marking: "INSULUX-1" molded on the inner surfaces of the blocks.

Listed—Reexamination Service.

See description of Reexamination Service on guide card.

Authorities having jurisdiction should be consulted before installation.

This card is issued by Underwriters' Laboratories, Inc.

Operator making observations on Insulux panel during Underwriters' Fire and Hose Stream Test.

*This type of construction may be called for in exterior walls by local fire insurance rating bureaus where fire exposure demands it, but it is not required on street fronts and in other locations of normal exposure.

FIRE TEST

Insulux Glass Block panels laid up in standard specification mortar and provided with specification bond ties have been subjected to both fire tests and fire and hose stream tests.

The panels were all rectangular but of varying dimensions in accordance with the requirements of the particular test specifications. The test furnaces were designed either according to the practice of the Underwriters' Laboratories and of the National Bureau of Standards, Department of Commerce, or of the New York State Department of Labor. The former were suitable for a test panel of approximately 120 square feet in area and the latter for typical window sizes.

Two time-temperature curves were followed in the tests, either that of the American Society for Testing Materials, or the New York State Department of Labor.

COMPRESSION TESTS ON INSULUX BLOCKS

Individual block bedded in Hydrocal, properly seasoned, were tested in compression at Purdue, Leland Stanford,

Jr., and Columbia Universities. Values shown represent average strength of five specimens and are expressed in pounds per square inch on gross cross-sectional area. Blocks were in position as laid in wall.

Series	Ultimate Strength
100	1700
200	1990
300	2150
400	1660

COMPRESSION TESTS ON INSULUX PANELS

Insulux panels bedded in Hydrocal, properly seasoned, were tested in compression at Purdue and Leland Stanford, Jr., Universities. Panels were laid in accordance with basic specifications. Values are expressed in pounds per square inch on gross cross-sectional area.

Series	Height	Panel Size		Ultimate Compression Strength
		Width		
100	9 Blocks	3 Blocks		395
200	8 Blocks	4 Blocks		482
300	5 Blocks	4 Blocks		506
400	6 Blocks	3 Blocks		591

INSULATION, CONDENSATION AND
INFILTRATION - RADIATION, LIGHT AND
SOUND TRANSMISSION - EXPANSION

TEST DATA

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

THERMAL INSULATION

Tests conducted by Purdue University using the guarded hot plate method give the conductance of a panel of Insulux at mean temperature 61° F. to be $C=0.79$ B.T.U. per hour, per square foot, per degree temperature difference. Using an inside surface coefficient of 1.65 and an outside surface coefficient of 6.00, the over-all coefficient from air to air of an exterior Insulux wall becomes:

$U=0.49$ B.T.U. per hour, per square foot, per degree temperature difference.

For a panel in still air and using ribbed block, this coefficient becomes:

Ribs vertical $U=0.40$ B.T.U. per hour, per square foot, per degree.

Ribs horizontal $U=0.31$ B.T.U. per hour, per square foot, per degree.

(This value .31 obtained by the accurate hot plate method closely approximates the generally used .29 value obtained by the hot box method.)

CONDENSATION AND INFILTRATION

Using the above value of $U=0.49$ for Insulux and the accepted value of $U=1.13$ for steel sash, the following outside temperatures are necessary to produce condensation on the inside of the building with the inside air at 70° F. and a relative humidity of 40 percent.

Insulux -14.2° F.
Steel Sash +33.5° F.

"Because the standard method of erecting Insulux is to lay it up in mortar with caulked expansion joints at jambs and head, air infiltration is reduced to a minimum. This reduction aids materially in reducing heat loss and maintaining desirable interior conditions of temperature and humidity."

SOLAR RADIATION

Because of their variable values of controlled light transmission, due to the variety of available face patterns, INSULUX Glass Block can be employed to reduce materially solar heat transmission as compared to a single-glazed window. Purdue University authorities, at the conclusion of elaborate tests on the solar heat transmission of INSULUX as compared with steel sash (testing equal areas of both materials), say: "The glass block No. 201 (Pattern No. 1) permitted 38.3 percent less solar heat

to pass than did the steel sash when exposed continuously to the sun; 37.7 percent less when exposed to the east; 51.5 percent less when exposed to the south; and 52.2 percent less when exposed to the west." Comparatively, they further point out that steel sash eliminates an average of but 20.4 percent of the solar heat.

In computing the cooling load for any actual installation, consult the Owens-Illinois Glass Company for B.T.U. transmission figures.

LIGHT TRANSMISSION

Photometric measurements made by Purdue University using a diffused source of light show that the transmission for single blocks, when the light falls perpendicular to the surface, is as follows:

Pattern No.	Percent of Incident Light Transmitted
1	78.5
2	73.4
7	84.4
11	86.5
16	84.4
17	84.0

TEST OF SOUND TRANSMISSION

Tests conducted in the Sound Chamber of the National Bureau of Standards showed an average sound reduction factor over a range of nine frequencies of 40.7 decibels. Similar tests by the same authorities give a comparative value for clay tile partitions:

4" Hollow Clay Tile, plastered both sides . . 42.1

COEFFICIENT OF THERMAL EXPANSION

The lineal coefficient of thermal expansion for Insulux laid with 4 types of mortar was determined by Purdue University to have an average value over a range between 10° F. and 150° F. as follows:

Kind of Mortar	Average Coefficient
Portland Cement and Hydrated Lime 50/50	.00000467
Masonry Cement No. 1	.00000443
Masonry Cement No. 2	.00000440
Masonry Cement No. 3	.00000450
Average	.00000450



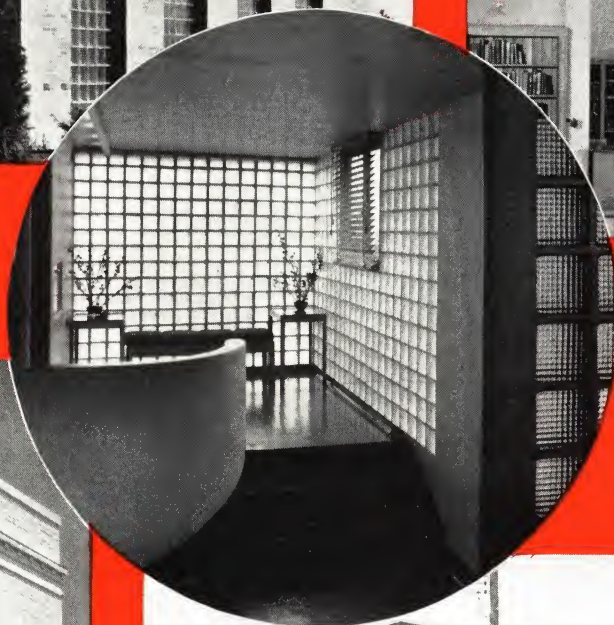
● Miles Laboratories, Inc., Elkhart, Ind. Frank Randall, Architect.

● Paragon Bldg., New York City. Eli Jacques Kahn, Architect.



● Underwood School, Milwaukee, Wisc.,
Clas & Clas, Inc., Architects,
Charles C. Reynolds, Associate Architect.

● House & Garden Ideal Home, Scarsdale,
N. Y. Julius Gregory, Architect.

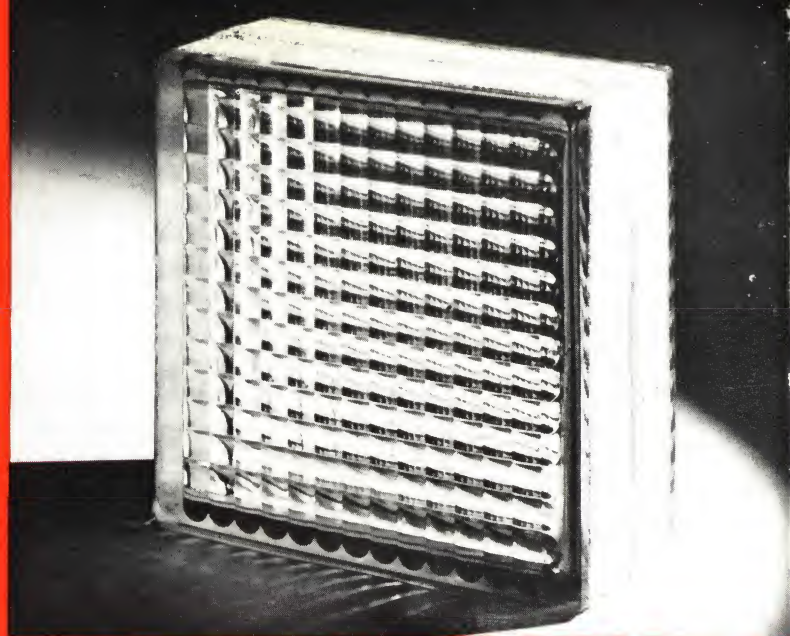
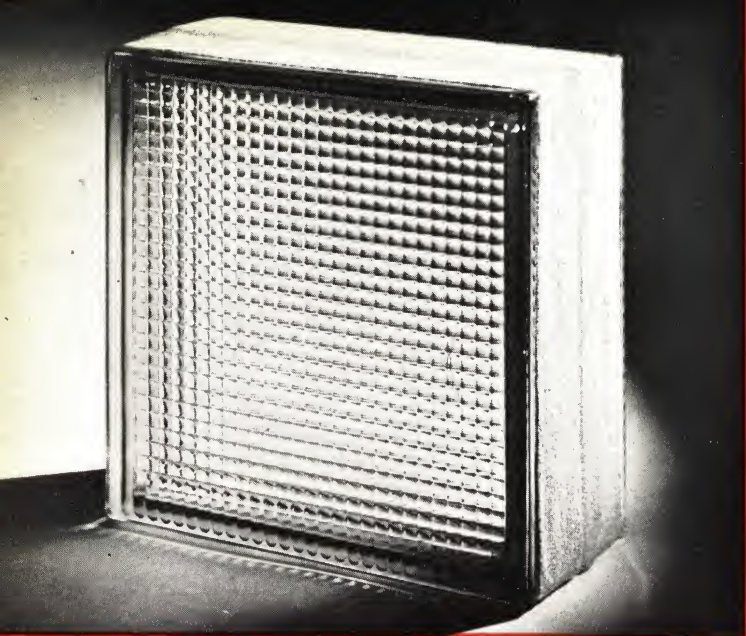


● McCaskey High School, Lancaster, Pa.
Henry Y. Schaub, Architect.

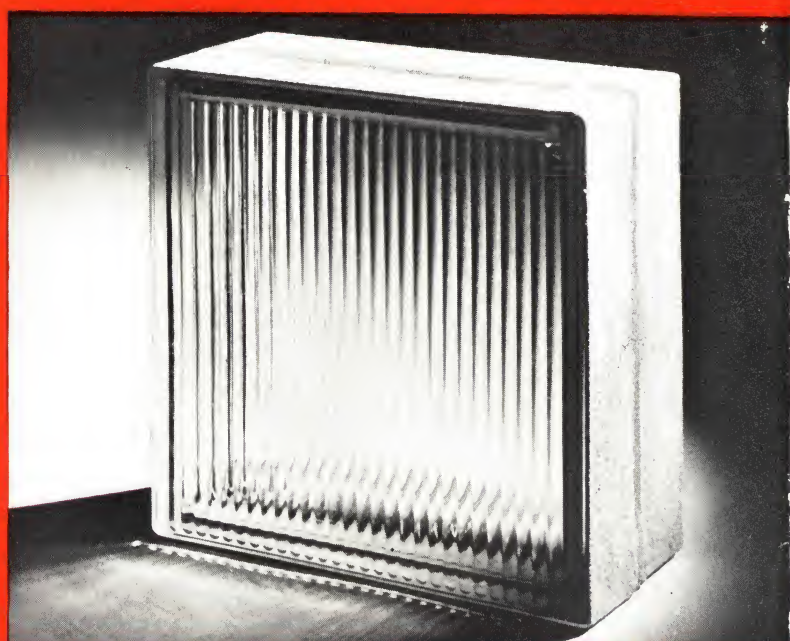
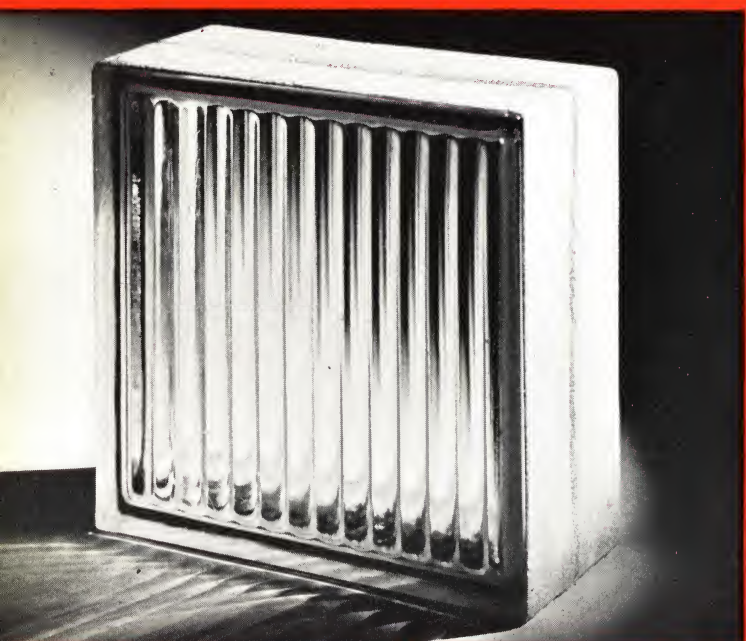
● Bromfield Residence, Denver, Colo.,
Burnham Hoyt, Architect.

● Radio Station WGY, Schenectady, N.Y.
Harrison & Foulhoux, Architects.





OWENS-ILLINOIS INSULUX GLASS BLOCK



ADMITS LIGHT • RETARDS HEAT

